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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/766,564

01/29/2004

Tae-Sung Kim

P57001

4048

7590

01/13/2006

Robert E. Bushnell
1522 K Street, N.W., Suite 300
Washington, DC 20005

EXAMINER

ERDEM, FAZLI

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 01/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/766,564

Applicant(s)

KIM, TAE-SUNG

Examiner

Fazli Erdem

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-10, 14-22 and 25-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 4-10, 14-22 and 25-28 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/29/2005
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4, 9, 10, 14, 19, 20 and 26-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Yaegashi (JP 2002026335) in view of Takahisa et al. (JP 07-058110) further in view of Arai et al. (6,160,272)

Regarding Claims 4, 9, 10, 14, 19, 20 and 26-28. Yaegashi discloses a thin film transistor and method of manufacturing the same where in Fig. 6, either the source or the gate electrode is composed of a layered structure composed of an Aluminum film 33a, an oxygen containing Aluminum film 33b that functions as a diffusion preventing layer and a Titanium film 33c. Yaegashi fails to disclose the titanium based stack structure and the required nitrogen ratio. However, Takahisa et al. disclose a semiconductor device where in Fig. 1, the required Titanium based stack structure is disclosed. Furthermore, Arai et al. disclose a self-light-emitting apparatus and semiconductor device used in the apparatus where in column 1 the required nitrogen ratio is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required titanium based stack structure and the required nitrogen ratio in Yaegashi as taught by Takahisa et al. and Arai et al. respectively, in order to have a liquid crystal display device with increased performance.

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3. Claims 5-8, 15-18, 21, 22 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Yaegashi (JP 2002026335) in view of Takahisa et al. (JP 07-058110) further in view of Arai et al. (6,160,272) further in view of Miyazaki et al. (5,804,878)

Regarding Claims 5-8, 15-18, 21, 22 and 25. Yaegashi discloses a thin film transistor and method of manufacturing the same where in Fig. 6, either the source or the gate electrode is composed of a limited structure composed of an Aluminum film 33a, an oxygen containing Aluminum film 33b that functions as a diffusion preventing layer and a Titanium film 33c. Yaegashi fails to disclose the Titanium based stack structure, the required nitrogen ratio and the required titanium nitride thickness. However, Takahisa et al. disclose a semiconductor device where the required Titanium based stack structure is disclosed in Fig. 1. Furthermore, Arai et al. disclose a self-light-emitting apparatus and semiconductor device used in the apparatus where in column 1 the required nitrogen ratio is disclosed. Finally, Miyazaki et al. disclose an electronic device where in 5, the required titanium nitride thickness is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required Titanium based stack structure, the required nitrogen ratio and the required titanium nitride thickness in Yaegashi as taught by Takahisa et al, Arai et al. and Miyazaki et al. respectively, in order to have a liquid crystal display device with increased performance.

Conclusion

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4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (571) 272-1914. The examiner can normally be reached on M - F 8:00 - 5:00.

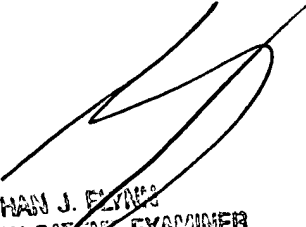
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FE

January 8, 2006



NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800